



CENTRAL VALLEY REGIONAL  
WATER QUALITY CONTROL BOARD

**Responses to Comments on the  
Scope of a Proposed  
Basin Plan Amendment for the  
Control of Pesticide Discharges  
in the Sacramento and  
San Joaquin River Basins**

***October 2006***



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



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# Responses to Comments on the Scope of a Proposed Basin Plan Amendment for the Control of Pesticide Discharges in the Sacramento and San Joaquin River Basins

***October 2006***

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## 1.0 Terms, Abbreviations, Acronyms, and Initialisms Used in this Report

§	Section
Basin Plan or Water Quality Control Plan	The statewide or regional (basin) documents that contain enforceable water quality standards and plans for their implementation. This report refers to the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins, 4 <sup>th</sup> Edition, Revised September 2004.
Basin Plan Amendment or Amendment	A change or changes (additions, deletions, modifications) to the Basin Plan.
Beneficial Use	A designated use for a water body.
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRC	California Rice Commission
CVCWA	Central Valley Clean Water Association
DPR	California Department of Pesticide Regulation
EC50	The chemical concentration that has an effect on 50% of the test population.
ILP	Irrigated Lands Program
Koc	Organic Carbon Partition Coefficient
LC50	The chemical concentration that is lethal to 50 % of the test population.
NPDES	National Pollutant Discharge Elimination System
Porter-Cologne	The Porter-Cologne Water Quality Control Act is the state of California's water quality control law.
PUR	Department of Pesticide Regulation Pesticide Use Report
Regional Water Board	California Regional Water Quality Control Board, Central Valley Region
State Water Board	State Water Resources Control Board
SWAMP	Surface Water Ambient Monitoring Program
TMDL	Total Maximum Daily Load
UC Davis	University of California, Davis
US EPA	U.S. Environmental Protection Agency
Water Quality Control Plan or Basin Plan	The statewide or regional (basin) documents that contain enforceable water quality standards and plans for their implementation.
Water Quality Objective (WQO)	The limits of water quality constituents or characteristics that are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.
WDRs	Waste Discharge Requirements

### **2.0 Summary**

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is developing a comprehensive amendment to its Basin Plan (Basin Plan Amendment or Amendment) to control pesticide discharges to natural waterways in the Sacramento and San Joaquin River watersheds. As part of the California Environmental Quality Act (CEQA) scoping process, Regional Water Board staff proposed a general framework for moving forward with a proposed Basin Plan Amendment. Members of the public were given an opportunity to endorse or suggest changes to the proposed scope of the Amendment.

A response to CEQA scoping comments is not required, however, Regional Water Board staff wanted to provide those who commented and other interested parties with the rationale for why some changes in scope were made and other suggested changes in scope were not made. This report provides Regional Water Board staff's (staff) responses to public comments received during the CEQA scoping process for the proposed Amendment and identifies areas in which changes to the initial scope have been made. As additional technical information is developed, comments from the public are received, or Regional Water Board direction is provided, additional changes to the scope of this proposed Basin Plan Amendment may be made. Any such changes will be identified as part of periodic stakeholder meetings and in status reports that are periodically posted to the Regional Water Board's web site.

After a brief overview of the proposed Amendment (Section 2.1), the major themes of the comments, and any proposed change to the scope are summarized (Section 2.2, Table 1). Public comments and staff responses are presented in Section 3. References cited are presented in Section 4. Appendix A provides a hypertext link to the CEQA scoping meeting presentation materials. Appendix B provides a hypertext link to the comment letters received.

#### **2.1 Overview**

The proposed Amendment will establish water quality objectives (WQOs) and a program of implementation for pesticides that are impacting or could potentially impact aquatic life uses in surface waters in the Sacramento and San Joaquin River watersheds. The geographic scope will be limited to those natural water bodies below the major reservoirs that might receive pesticide runoff. Since

there are over 300 pesticide active ingredients reportedly used in this area, priority will be given to address the top five to ten pesticides that pose the highest risk to surface waters. Natural surface water bodies<sup>1</sup> (e.g. creeks, sloughs, and rivers) will be the focus of this Amendment, since confirmation of appropriate aquatic life uses in constructed water conveyances is much more complex and will likely need to be conducted as a separate effort.

The primary technical reports associated with this Amendment will address: 1) water quality criteria for potential water column impacts; 2) sediment quality criteria to address potential benthic impacts; 3) a relative risk analysis of pesticides to prioritize which pesticides to focus on; 4) review and confirmation of applicable aquatic life uses for natural surface water bodies that are not currently identified in the Basin Plan; and 5) available management practices to control discharge of pesticides.

### **2.2 Summary of Major Themes of Comments**

In February 2006, staff held three public workshops as part of the CEQA scoping process to solicit public comments on the proposed scope of the Amendment. Eleven comment letters were received from State and local agencies, agricultural industry groups, wastewater treatment representatives, pesticide manufacturers, environmental interests, and private citizens. Table 1 summarizes the major themes of the comments received and the scope changes, if any, that will be made. Section 3 provides staff responses to each public comment.

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<sup>1</sup> For this Amendment, the term "natural water bodies" refers to flowing surface waters that were originally formed by natural geologic processes. Natural water bodies that have been modified will be addressed. Water conveyances that have been constructed will not be considered, unless those conveyances are specifically identified in the Basin Plan.



## Responses to Scoping Comments

**Table 1. Major Public Comment Themes and Amendment Scope Changes**

Major Public Comment Theme	Amendment Scope Changes
<ul style="list-style-type: none"> <li>Criteria should be based on biocriteria or toxicity</li> </ul>	<p>The proposed project scope will be changed to include an evaluation of the potential use of biocriteria as water quality criteria. The scope will not be changed to review toxicity as this is already incorporated into the current narrative water quality objective in the Basin Plan.</p>
<ul style="list-style-type: none"> <li>Criteria should be based on a weight of evidence approach</li> </ul>	<p>The scope of the project will be changed to include consideration of a weight of evidence approach in setting water quality objectives.</p>
<ul style="list-style-type: none"> <li>The Regional Water Board should establish a technical advisory committee of stakeholders and qualified experts.</li> </ul>	<p>Staff intends to hold periodic (approximately quarterly) stakeholder meetings to discuss progress in the development of the technical reports associated with the Amendment. The public will be given an opportunity to comment on and suggest changes to draft staff reports. For both the stakeholder meetings and in providing comments, experts representing stakeholder interests can provide comments and suggestions. For the water quality criteria derivation, a five-member scientific peer review panel has been established, which include academic and California state agency experts.</p>
<ul style="list-style-type: none"> <li>The Amendment should be coordinated internally to remove duplication of efforts and minimize the number of new projects put before stakeholders and the public.</li> </ul>	<p>Staff has coordinated internally throughout the process of developing this Amendment proposal. The proposed project scope will be changed to include a description of internal and external roles and responsibilities and how they will be coordinated. Staff will also establish regular communications with stakeholders.</p>
<ul style="list-style-type: none"> <li>Determination of aquatic life beneficial uses is a waste of resources</li> </ul>	<p>Beneficial uses must be considered in adopting water quality objectives. However, the proposed project scope will be limited to a review of available information.</p>
<ul style="list-style-type: none"> <li>The Amendment should include a general assessment of stream health instead of a simple verification of the presence of aquatic life</li> </ul>	<p>Resources are not available to perform a general assessment of stream health for all of the natural water bodies in the Central Valley. Such an assessment is not necessary to establish water quality objectives and a program of implementation. No scope change is proposed.</p>
<ul style="list-style-type: none"> <li>Aquatic life beneficial uses should be applied appropriately.</li> </ul>	<p>The proposed project already includes a review of aquatic life beneficial uses. No scope change is proposed</p>

## Responses to Scoping Comments

**Table 1. Major Public Comment Themes and Amendment Scope Changes**

Major Public Comment Theme	Amendment Scope Changes
<ul style="list-style-type: none"> <li>The Amendment should be changed in recognition that pesticides are not the only stressor.</li> </ul>	<p>Staff recognizes that pesticides are not the only stressor to aquatic life, but resources are not available to concurrently review all potential stressors. No scope change is proposed.</p>
<ul style="list-style-type: none"> <li>The criteria should be evaluated in accordance with Porter Cologne section 13241, which requires an economic analysis.</li> </ul>	<p>An economic analysis is already proposed as part of the project. No scope change is required.</p>
<ul style="list-style-type: none"> <li>Technical comments were made about the Relative Risk Evaluation report.</li> </ul>	<p>Technical comments will be addressed and responses to comments included in revisions to the Relative Risk Evaluation report. No scope change is proposed.</p>
<ul style="list-style-type: none"> <li>The scope of the proposed Amendment should be widened to include additional environmental issues (e.g. groundwater, all Central Valley waterways, worker safety).</li> </ul>	<p>The scope of work has been defined to efficiently utilize available resources. Significant scope expansion to address additional environmental issues is not feasible at this time. In addition, a number of the environmental issues identified are not within the Regional Water Board's jurisdiction. No scope change is proposed.</p>
<ul style="list-style-type: none"> <li>The Amendment should address all waterways.</li> </ul>	<p>Resources are not available to address all waterways. Data necessary to confirm applicability of aquatic life uses in constructed water conveyances is not readily available and may be necessary for establishing water quality objectives. No scope change is proposed.</p>
<ul style="list-style-type: none"> <li>The Amendment should be coordinated with the Department of Pesticide Regulation (DPR) to establish criteria during the pesticide registration process.</li> </ul>	<p>The Regional Water Board has no authority over the DPR's pesticide registration process. However, the scope of work will be changed to include consideration of policies to address coordination and Regional Water Board involvement in the registration process.</p>
<ul style="list-style-type: none"> <li>Establishment of sediment quality objectives should be deferred until the State Water Board has completed its sediment quality objectives development process.</li> </ul>	<p>In the Central Valley, the State Water Board's process is focused on the Delta and will not be complete for several years. No scope change is proposed, however, Regional Water Board staff will track the State Water Board's sediment quality objective process and consider new information as it becomes available.</p>

### **3.0 Response to Public Comments**

#### **3.1 Comment Letter 1 – Kristen T. Castaños, Submitted on behalf of the California Rice Commission**

**COMMENT 1-1:** It is difficult to provide meaningful comments on the proposed CEQA scoping and public workshop because very little information has been provided to define the proposed CEQA project and the proposed Basin Plan Amendments.

**RESPONSE TO COMMENT 1-1:** This comment letter was received prior to the CEQA scoping meeting and public workshop. A detailed project description was presented at the meeting. Regional Water Board Staff received no additional correspondence from this commenter following the CEQA scoping meetings.

The Regional Water Board is committed to providing stakeholders with reasonable opportunities to review and comment on the proposed Basin Plan Amendment. Staff will hold periodic public meetings where additional project details and work products will be discussed, and comments received from those meetings will be considered. Comments will be solicited following public release of the proposed Basin Plan Amendment and associated Staff Report and again in conjunction with the Regional Water Board Public Hearing to consider adoption of any proposed Amendment. Comments will also be solicited on specific draft technical reports.

**COMMENT 1-2:** The information that is provided in the fact sheet about the proposed pesticide Basin Plan Amendments suggests that the proposed Basin Plan Amendment process will duplicate the Irrigated Lands Program (ILP) efforts. There is no demonstrated need for the Regional Water Board to initiate yet another, separate program to evaluate pesticide discharges. The ILP program, along with the Rice Pesticide Program and the various other efforts underway, are sufficient to address pesticide discharges, particularly rice pesticides. The Regional Water Board should refrain from pursuing pesticide Basin Plan Amendments unless and until the ILP program identifies a need for such Amendments.

**RESPONSE TO COMMENT 1-2:** Pesticides are applied for a variety of purposes in residential, commercial, industrial, transportation, and agricultural settings. Although the ILP will provide a great deal of valuable information

regarding pesticide discharges, the ILP will not address these other potential sources. The Basin Plan Amendment will address both urban and agricultural sources of pesticides. In addition, it is anticipated that the Amendment will establish water quality objectives and a compliance time frame. These new objectives and compliance schedules should support ongoing efforts to address pesticide discharges from agricultural and urban areas, rather than duplicate those efforts.

The Regional Water Board's recent Basin Plan Amendments addressing diazinon and chlorpyrifos demonstrate that historic use of those pesticides was not limited to irrigated agriculture. The limited environmental data on pyrethroid insecticides clearly indicates their presence in both agricultural and urban settings (Weston et al. 2004; Amweg et al. 2006). This information suggests that an effort focused solely on discharges under the Irrigated Lands Program could miss potentially significant sources.

In addition, the scope of this Basin Plan Amendment will include pesticides that are on the Clean Water Act Section 303(d) list. Those pesticides have already been identified as causing non-attainment of water quality standards. In accordance with the Clean Water Act, Total Maximum Daily Loads (TMDLs) must be adopted for those water bodies and pesticides. In California, TMDLs are generally established through Basin Plan Amendments.

In the staff report, Regional Water Board staff will include additional information explaining the basis for the proposed Basin Plan Amendment. The staff report will also discuss the anticipated roles and responsibilities of the Regional Water Board programs that will be involved in implementing the Amendment.

**COMMENT 1-3:** Many of the pesticides discussed in the Regional Water Board's "Relative Risk Evaluation for Pesticides used in the Sacramento River Watershed" (Draft, Oct. 2005) are included in the Rice Pesticide Program. CRC and the Regional Water Board have substantial amounts of data and information about the impact of rice pesticides on surface waters and aquatic life, and this information should be utilized in any pesticide Basin Plan Amendment process.

**RESPONSE TO COMMENT 1-3:** The response to this comment will be included in the revisions to the relative risk evaluation report.

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## Response to Scoping Comments

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**COMMENT 1-4:** It is unclear how the proposed pesticide Basin Plan Amendment process relates to the efforts underway to develop total maximum daily loads (TMDLs) for diazinon and chlorpyrifos, as well as the current program to address toxic hotspots.

**RESPONSE TO COMMENT 1-4:** The diazinon and chlorpyrifos efforts underway focused on our major waterways (San Joaquin River, Sacramento River, Feather River, and Delta waterways). The proposed Amendment will address the tributaries to those waters, as well as other pesticides that potentially impact aquatic life. The Bay Protection Toxic Hot Spots program has two pesticide related components. The sediment quality objectives efforts by the State Water Board will be limited to the Delta. The Bay Protection clean-up plans for diazinon and chlorpyrifos in the Delta focused on adopting Basin Plan Amendments for the Delta and major tributaries. Those Basin Plan Amendment efforts have been completed.

The Staff Report will include a more detailed discussion of the relationship of the proposed Basin Plan Amendment to previous pesticide Basin Plan Amendments. The Staff Report will also include a discussion of how implementation of the proposed Basin Plan Amendment will be coordinated with other Regional Water Board programs. Regional Water Board staff is participating in various committees convened by the State Water Board on the development of sediment quality objectives for the Bay Protection Toxic Hot Spots program. Sediment quality objectives may be included in the proposed Amendment to address streams outside of the Delta.

**COMMENT 1-5:** To the extent the Regional Water Board moves forward with the proposed Basin Plan Amendment process, CRC believes that the scope of work outlined in the fact sheet presents an appropriate process for determining and analyzing appropriate Basin Plan Amendments related to pesticides.

**RESPONSE TO COMMENT 1-5:** The Regional Water Board appreciates the Commenter's support of the proposed process.

**COMMENT 1-6:** In accordance with Water Code section 13241, CRC encourages the Regional Water Board to follow this process carefully, allowing public input at each stage, and use the information developed through this process to determine whether any Basin Plan Amendments are warranted.

**RESPONSE TO COMMENT 1-6:** The Regional Water Board staff fully intends to follow all State and federal requirements during the Basin Plan Amendment process. Regional Water Board staff intends to meet with stakeholders periodically (approximately quarterly) to provide updates on the status of technical work products and the Basin Plan Amendment staff report. We appreciate and will carefully evaluate all public input we receive during the development of the Basin Plan Amendment. Feasible alternatives to a Basin Plan Amendment for specific pesticides will also be considered.

**COMMENT 1-7:** It is appropriate to focus any efforts on streams that should support aquatic life, and not on constructed conveyances. The Regional Water Board should focus on ensuring that any Basin Plan Amendments clearly indicate the scope of their applicability, and avoid misunderstandings that result from application of the Basin Plan's Tributary Rule, and other provisions that the Regional Water Board uses to identify designated beneficial uses. The Regional Water Board should focus on ensuring that any Basin Plan Amendments focus on water bodies that support aquatic uses, and avoid application to water bodies where such uses do not or cannot exist, despite identified designated uses.

**RESPONSE TO COMMENT 1-7:** Regional Water Board staff will describe in a technical report aquatic life uses that exist within natural waterways of the Central Valley. This report and proposed Basin Plan Amendment will identify the water bodies that will be affected by the proposed Amendment. Since the aquatic life uses will be reviewed for the identified water bodies, the application of the Basin Plan's tributary rule will be moot.

**COMMENT 1-8:** CRC has numerous technical comments on the "Relative Risk Evaluation for Pesticides Used in the Sacramento River Watershed". The attached document includes technical comments on this assessment.

**RESPONSE TO COMMENT 1-8:** The response to these comments will be included in the revisions to the relative risk evaluation report.

**3.2 Comment Letter 2 – Danny Gottlieb, Representing Citizens For Safe Water in Habitats in and Around Modesto, CA / Stanislaus County / USA**

**COMMENT 2-1:** 'Cryolite', Methyl Bromide, Sulfuryl Fluoride and other Aluminum fluoride based agricultural and non-agricultural products should be included in the list of target compounds, and applications of these compounds within stormwater runoff distance to the San Joaquin River and its tributaries should be mapped out.

**RESPONSE TO COMMENT 2-1:** Based on DPR's Pesticide Use Report (PUR) database, there has been no report of sulfuryl fluoride used in the Central Valley; therefore, it has not been evaluated for this Basin Plan Amendment. Methyl bromide is a gaseous pesticide and is applied as a fumigant. Due to its high volatility, methyl bromide would not be expected in surface water runoff.

With respect to cryolite, the reported amount of use in Sacramento and San Joaquin River Delta is relatively high; therefore, it is listed in the target pesticide list for the Delta. Cryolite is mainly applied on grapes in May. The range of 96-hr LC50s is from 40 to 400 parts per million (ppm) based on information from the EPA toxicity database. The lowest LC50 value was tested on pink shrimp and cryolite would be ranked as relatively low risk based on the lowest LC50 value.

**COMMENT 2-2:** The commenter provided a number of references to information publicly available through the Internet and requested that the information be entered into the CEQA scoping record.

**RESPONSE TO COMMENT 2-2:** Regional Water Board staff appreciates receiving the information. The referenced material will be reviewed.

**COMMENT 2-3:** Point discharge sites near Merced CA and Los Banos and any other discovered high use area for Cryolite, or related compounds should be monitored for residue levels on a pilot test basis.

**RESPONSE TO COMMENT 2-3:** Because of the limited funds available for pesticide monitoring, a smaller number of pesticides were chosen out of a larger group of pesticides found to be of relative high-risk (Lu et al. 2006). The smaller, selected group of target pesticides will be monitored. Cryolite will not be monitored as part of this effort, since it has not been identified as posing a high

potential relative risk when compared to other pesticides used in the area addressed by the proposed Amendment.

### **3.3 Comment 3 – G. Fred Lee, PhD, DEE and Anne Jones-Lee, PhD, G. Fred Lee & Associates**

**COMMENT 3-1:** A number of the topic areas that are proposed by the staff to be included in this pesticide Basin Plan Amendment are devoted to topics that have been worked on for many years by the US EPA and others, with much greater financial and technical assistance resources than are available to the Regional Water Board staff. Many of the issues that the staff propose to address will not be successfully addressed with the resources available in the timeframe allowed.

**RESPONSE TO COMMENT 3-1:** Regional Water Board staff appreciates the concerns regarding resources and technical assistance. The resources currently available should be sufficient for the proposed scope. If some component of the proposed Basin Plan Amendment cannot be addressed due to lack of information or time, then that component will be deferred.

**COMMENT 3-2:** Several aspects of the staff's proposed approach for regulating pesticides are potentially technically invalid and can readily lead to inappropriate regulations. The basic problem is that the staff, in developing this approach, potentially could fail to adequately consider the aquatic chemistry and aquatic toxicology/biology of pesticides as they impact aquatic life.

One of the objectives of the proposed pesticide Basin Plan Amendment is to establish numeric water quality objectives for pesticides. It is important that the Regional Water Board staff fully understands and addresses the difficulties of developing reliable water quality criteria/objectives. While it is relatively simple to develop numeric values that can be called "water quality objectives" for pesticides, without an adequate and reliable database of the impact of pesticides on aquatic life-related beneficial uses, such simplified approaches for developing water quality criteria/standards/objectives can readily lead to inappropriate regulation of pesticides.

**RESPONSE TO COMMENT 3-2:** Regional Water Board staff is gathering the technical information that will be needed to prepare this Basin Plan Amendment. We have not yet proposed a specific technical or policy approach. In general,



staff will rely on readily available data and information to develop the Basin Plan Amendment. If there is readily available information that we are not considering, we would appreciate being made aware of it.

Once staff has evaluated the available technical information, we will develop a proposed Basin Plan Amendment consistent with applicable laws and the available information. In the process of establishing water quality objectives, we will consider both narrative approaches called for by this commenter and numeric approaches called for by other commenters (see **Comment 4-4**).

To help ensure the scientific basis of the proposal, the Basin Plan Amendment will undergo scientific peer review (Health and Safety Code § 57004). In addition, the water quality criteria research being conducted by researchers at the University of California, Davis is undergoing an independent peer review by a five-member panel of academic and agency scientists. Staff will hold periodic (approximately quarterly) public workshops where additional project details and work products will be discussed. Comments will be solicited on the information presented at the meetings and on the draft technical reports produced.

**COMMENT 3-3:** Staff should develop concurrently with the proposed water quality objectives, guidance on how to develop a site-specific water quality objective modification approach for pesticides that can be applied to make the objectives more appropriately applicable to a particular waterbody in which there is interest in regulating pesticide concentrations.

**RESPONSE TO COMMENT 3-3:** Water quality objectives will be established consistent with the requirement of Porter-Cologne. Porter-Cologne requires site-specific objectives through the establishment of water quality objectives on a water body basis. Specifically, if the impact of a pesticide to beneficial uses can be affected by an environmental characteristic of a specific waterbody, it will be considered during the establishment of the water quality objective. If there is readily available information on site-specific factors that we are not considering, we would appreciate being made aware of it.

**COMMENT 3-4:** The current Basin Plan approach for regulating pesticides and other chemicals is based on controlling aquatic life toxicity due to these chemicals. This narrative approach has considerable technical merit, in that it incorporates, through toxicity testing, an assessment of the waterbody site-specific characteristics that affect the primary impact of the pesticide on aquatic life – i.e., toxicity.

Chemically based sediment quality criteria are unreliable for assessing the potential for chemicals in the sediments, including pesticides, to cause aquatic life toxicity. The chemically based approach proposed by Regional Water Board staff can readily lead to inappropriate regulation, since it can lead to an incorrect assessment of aquatic life toxicity. The Regional Water Board should base proposed regulations on aquatic life toxicity assessment in the water column and sediments.

**RESPONSE TO COMMENT 3-4:** As discussed in **Response to Comment 3-2**, Regional Water Board staff has not yet proposed a specific technical or policy approach. The Regional Water Board will review various approaches for setting pesticide water quality objectives in the alternatives analysis of the Staff Report. This will include consideration of the establishment of new numeric and/or narrative objectives, modifying existing objectives, or making no changes.

**COMMENT 3-5:** The approach of conducting bioassessments in various streams in the Central Valley to establish that there is, at least at times, aquatic life in the streams is a waste of time and money. There is no issue as to whether there are some forms of aquatic life in streams when there is water present. There is no need to spend taxpayers' money proving what is obvious.

**RESPONSE TO COMMENT 3-5:** Beneficial uses of waterbodies must be considered when establishing water quality objectives. The most sensitive uses of a waterbody to pesticides are generally the aquatic life uses, which have not been formally identified in the Basin Plan for all waterways. To document that aquatic life beneficial uses have been appropriately considered in establishing objectives, Regional Water Board staff believe it is appropriate to confirm the presence of those uses. It should also be noted that the "aquatic life" uses are in fact expressed as several different categories of use, including "cold freshwater habitat" and "warm freshwater habitat". Staff will review which aquatic life uses are applicable for the waterways addressed by the Basin Plan Amendment.

**COMMENT 3-6:** The screening process used in the Relative Risk Evaluation should be revised to consider the situation where very small countywide annual use amounts of some highly toxic pesticides could cause significant aquatic life toxicity in waterbodies.

**RESPONSE TO COMMENT 3-6:** The response to this comment will be included in the revisions to the relative risk evaluation report.

**COMMENT 3-7:** Toxicity to algae in many of the waterbodies in the Central Valley of California is not adverse to the beneficial uses of the waterbody, since many of these waterbodies have excessive growths of algae that, in themselves, are significantly impairing water quality/beneficial uses. While toxicity to algae is a technical violation of the Basin Plan, it is questionable that the Board will require the control of pesticides (herbicides) that are found in waterbodies with excessive growths of algae. Regional Water Board staff should revise the relative risk assessment to separate the databases for aquatic life toxicity to animals from those to plants.

**RESPONSE TO COMMENT 3-7:** The beneficial uses that the Regional Water Board needs to protect include the "...preservation or enhancement of aquatic...vegetation..." The existing toxicity objective states "[a]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." Both the use definition and the toxicity objective suggest that the Regional Water Board should protect aquatic plant life, including algae. The Commenter is correct in stating that excessive algae growth can be detrimental. However, the Regional Water Board does not have evidence that excessive algae growth is a problem in the waterways that will be addressed by this Amendment. In addition, the algae species that are most sensitive to herbicides may not be the same species as those that cause any nuisance algae blooms. If the aquatic plants most sensitive to herbicides are impacted to a greater extent than algae species causing nuisance blooms, then failure to control herbicide runoff could exacerbate nuisance blooms.

To help distinguish between LC50 and EC50 values used in the study, the report had been revised based on earlier comments to include a table (Table 4 in the report) for the herbicides evaluated. Table 4 shows the risk rank, toxicity values, and the tested species. In addition, the appendix of the report includes both EC50 and LC50 values, for aquatic plants and animals respectively, for all herbicides.

We do not intend to address all herbicides identified in the report. We will further evaluate the pesticides identified as posing the highest relative risk to determine which pesticides will be the focus of this Amendment.

**COMMENT 3-8:** CRWQCB staff is not familiar with the literature, and especially the work that is being done at the State Water Board level, in developing sediment quality criteria for the state of California. Spending taxpayer funds to review the literature on developing sediment quality criteria for pesticides is a waste of time and money. It could readily result in technically invalid approaches being adopted by the Regional Water Board.

**RESPONSE TO COMMENT 3-8:** As discussed in **Response to Comment 3-2**, Regional Water Board staff is gathering the technical information that will be needed to prepare this Basin Plan Amendment. In general, staff will rely on readily available data and information to develop the Basin Plan Amendment. If there is readily available information that we are not considering, we would appreciate being made aware of it. It should be noted that the State Water Board is developing sediment quality objectives for bays and estuaries (including the Delta) and not for freshwater streams. However, the Regional Water Board is involved in the State Water Board process and will rely on information generated through the Bay Protection Toxic Hot Spots program, as appropriate. Also see response to Comment 1-4.

**COMMENT 3-9:** Chemicals exist in aquatic sediments in a variety of forms, only some of which are toxic/available. A regulatory approach must be based on assessing aquatic life toxicity through toxicity measurements. In addition, an assessment of the benthic organism assemblages present in a waterbody's sediments relative to the habitat characteristics should be included in assessing the potential impacts of a chemical or group of chemicals associated with sediments on water quality-related beneficial uses of a waterbody.

**RESPONSE TO COMMENT 3-9:** The Regional Water Board will review various approaches for setting numeric or narrative sediment quality objectives in the alternatives analysis of the Staff Report. This will include consideration of a toxicity assessment and biological assessments.

**COMMENT 3-10:** Rather than the Regional Water Board staff trying to develop sediment quality objectives for pesticides on a "crash" basis to fit within the limited timeframe that has been proposed for developing the pesticide Basin Plan Amendment, it would be far more appropriate to stop any work along this line as part of the Basin Plan Amendment, and become active in the SWRCB's efforts to develop sediment quality

objectives for Delta waters. Such objectives could be applicable to other waterbodies in the Central Valley.

**RESPONSE TO COMMENT 3-10:** The Regional Water Board is aware of and is participating in the State Water Board's sediment quality objectives development effort. However, the Regional Water Board staff does not believe that it is appropriate to wait on completion of the State Water Board's efforts. Under their current schedule (SWRCB, 2006) the State Water Board's staff report will not be released until 2010, and an adopted objective would most likely not be promulgated until 2012, assuming no delays or changes in funding between now and then.

In addition, while the State Water Board's effort will cover the legal Delta, other portions of the Regional Water Board's Region will not be covered. As a result, completion of the State Water Board's effort will not alleviate the need for the Regional Water Board to develop sediment quality objectives. Lastly, should the State Water Board's final sediment quality objective prove to be a significant improvement over the proposed Basin Plan Amendment, the Regional Water Board can amend the Basin Plan again at that time<sup>2</sup>.

For these reasons the Regional Water Board does not see any need to wait for completion of the State Water Board's sediment quality objectives project. The Basin Plan Amendment Staff Report will address how sediment quality objectives will be coordinated with State Water Board's sediment quality objectives program to the extent they have been developed. If, during the course of the evaluation, it becomes clear that there is insufficient scientific information to establish meaningful sediment quality objectives, the scope of the proposed Basin Plan Amendment will be modified at that time.

**COMMENT 3-11:** The Regional Water Board staff propose to use "models" to assess the allowable loading capacity for pesticides discharged to Central Valley waterbodies. There is no model available, nor will one likely be developed, that can develop reliable predictions of the allowed loading of a pesticide to a waterbody without a massive waterbody-specific study.

**RESPONSE TO COMMENT 3-11:** Regional Water Board staff will need to rely on some type of conceptual framework (or "model") to evaluate the fate and

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<sup>2</sup> Any sediment quality objectives adopted by the State Water Board for the Delta would supercede any Regional Water Board sediment quality objectives.

transport of pesticides. The framework will assist the Board staff in identifying areas that are likely to have relatively high loads of specific pesticides; evaluating the feasibility of meeting water quality objectives; and identifying a reasonable time frame for compliance. The framework may be a relatively simple assessment based on available concentration and pesticide use data or it may be a more sophisticated assessment using computer models (for example, the models used by US EPA for pesticide registration). Any assessment or modeling effort will be evaluated by comparison to available monitoring data. We agree reliable predictions using computer models can be very challenging, however, we do not want to disregard computer models if they can provide insight into the fate and transport processes.

**COMMENT 3-12:** The Regional Water Board should not conduct an assessment of the management practice alternatives. Little progress has been made and, for that matter, will be made for a number of years, in reliably evaluating potentially effective management practices for controlling pesticides in stormwater runoff and irrigation tailwater discharges in the Central Valley. This situation will not change significantly within the timeframe that is being allowed for development and implementation of the pesticide Basin Plan Amendment.

**RESPONSE TO COMMENT 3-12:** When establishing water quality objectives, the Regional Water Board is obligated to consider whether the objectives are feasible to attain (see for example Porter-Cologne § 13241(c)). For pesticide discharges from agricultural lands, the Regional Water Board will consider the management practices that are available for reducing or eliminating runoff. The Regional Water Board Basin Plan Amendments for diazinon in the Sacramento and Feather Rivers, and diazinon and chlorpyrifos in the San Joaquin River and Delta included an evaluation of available management practices. For this Basin Plan Amendment, we will update the information we relied on previously to reflect any new information or study results.

It should be noted that a precise quantification of expected reductions from all potential management practices is not anticipated to be necessary for this Basin Plan Amendment. The Regional Water Board cannot require adoption of specific practices, but will evaluate whether feasible options are available for growers to reduce or eliminate pesticide discharges, where necessary.

**COMMENT 3-13:** The current Regional Water Board staff's proposed approach for developing a Basin Plan Amendment that can be used for

regulating pesticides in the Central Valley has highly significant technical problems that will cause it to fail to develop reliable approaches for controlling aquatic life toxicity in Central Valley waterbodies associated with the use of pesticides in this area. As discussed above, a number of the components of this proposed approach fail to adequately and reliably consider the complexity of the issues that are well known to affect pesticide-caused aquatic life toxicity. If the Board staff proceed with this approach, it will almost certainly lead to justifiable litigation against the Board for attempting to use technically invalid approaches for regulating pesticides.

**RESPONSE TO COMMENT 3-13:** See **Response to Comment 3-2**.

**COMMENT 3-14:** A stand-alone compliance monitoring program for TMDL implementation should be developed concurrently with the proposed Basin Plan Amendment and should not be tied to compliance monitoring proposed for the Ag Waiver monitoring program. If and when the Ag Waiver monitoring program develops a credible aquatic life toxicity monitoring program, then the two monitoring programs could be integrated.

**RESPONSE TO COMMENT 3-14:** It is likely that both urban and agricultural pesticide sources will be identified for this Basin Plan Amendment. As part of the Amendment, monitoring and surveillance requirements will be identified. Any NPDES (e.g. storm water or waste water treatment plant) permit that includes discharges of pesticides regulated by the Amendment may require changes to its associated monitoring and reporting program to conform with the Amendment. Similarly, any monitoring requirements for agricultural sources will likely be addressed in monitoring and reporting program associated with those discharges. If necessary, the Regional Water Board can revise the appropriate monitoring and reporting programs to incorporate the required compliance monitoring elements. Separate monitoring and reporting programs for the same dischargers would likely require the generation, submittal, and evaluation of information that is redundant. Such redundancy would unnecessarily increase costs and complexity for both the discharger and the Regional Water Board.

**COMMENT 3-15:** The Regional Water Board, with the cooperation of the Department of Pesticide Regulation, should establish a proactive approach for screening the initial uses of new or expanded-use pesticides in the Central Valley. This approach should involve conducting field studies associated with the initial uses of new or expanded use pesticides,

where stormwater runoff and fugitive and tailwater discharges would be monitored to determine if the receiving waters for this runoff/discharge are toxic to aquatic life.

This approach would specifically address the deficiencies in the US EPA Office of Pesticide Programs' failure to incorporate fate and transport information as part of registering/labeling pesticides for use under conditions where stormwater runoff or water discharges from the use area could transport pesticides into receiving waters and thereby cause aquatic life toxicity in these waters. This proactive approach could be funded by the pesticide manufacturers/ formulators and those who wish to use these pesticides in the Central Valley. Initial-use and periodic studies of this type would detect problematic pesticides before widespread use occurs.

**RESPONSE TO COMMENT 3-15:** Regional Water Board staff will discuss the comment with the Department of Pesticide Regulation. When the policies associated with this Amendment are developed, we will consider the policy suggested by the Commenter. It should be noted that the Regional Water Board has no authority to evaluate or mitigate potential water quality impacts through the pesticide registration process.

**COMMENT 3-16:** Additional information on issues pertinent to regulating new or expanded-use pesticides has been presented in the Stormwater Runoff Water Quality Newsletter (Stormwater Runoff Water Quality Newsletter 8(6), November 11, 2005. <http://www.gfredlee.com/newsindex.htm>).

**RESPONSE TO COMMENT 3-16:** Regional Water Board staff appreciates receiving the information. The referenced material will be reviewed.

### **3.4 Comment Letter 4 – Warren Tellefson, Executive Officer for the Central Valley Clean Water Association**

**COMMENT 4-1:** First, CVCWA requests that the Regional Water Board involve CVCWA as a stakeholder in this process. CVCWA's members receive water quality based effluent limits based on adopted water quality objectives. Thus, CVCWA is interested in the adoption of new water quality objectives in general, and pesticides in particular. Especially since CVCWA has little control over the input of pesticides into the wastewater system and therefore may be obligated to meet pesticide limits through advanced treatment processes.



**RESPONSE TO COMMENT 4-1:** The Regional Water Board is committed to providing stakeholders with reasonable opportunities to review and comment on the proposed Basin Plan Amendment. Staff will hold periodic public workshops where additional project details and work products will be discussed, and comments received from those meetings will be considered. Comments will be formally solicited again following public release of the Staff Report and again at the Regional Water Board Public Hearing. Comments will also be solicited on specific draft technical reports. CVCWA has been added to the project's mailing list and will be notified of future workshops.

**COMMENT 4-2:** The Regional Water Board should comply with the legislative intent and the specific requirements of California Water Code sections 13241-13242, which is to balance the needs of maintaining high quality water against all of the demands being placed on the water. (Ca. Water Code, § 13000.). Most importantly, the Regional Water Board must balance the economic considerations against the environmental impacts associated with achieving the objective.

**RESPONSE TO COMMENT 4-2:** The Regional Water Board intends to comply with the provisions of the California Water Code that apply to the adoption of water quality objectives and Amendments to the Basin Plan.

**COMMENT 4-3:** In CVCWA's experience, the adoption and application of narrative water quality objectives often overlook the requirements contained in Sections 13241 and 13242 apply to the adoption of any water quality objective, regardless of the nature of the objective. Therefore, the Regional Water Board must consider all of the factors outlined in Water Code section 13241 when adopting a narrative objective, and must prepare a program of implementation as required by Water Code section 13242. Furthermore, the Regional Water Board must carefully articulate how the Regional Water Board intends to interpret the narrative objective and consider the factors of Water Code section 13241 in relationship to the interpretation.

**RESPONSE TO COMMENT 4-3:** The Basin Plan Amendment will be developed consistent with applicable laws. A framework will be provided in the Amendment to assist in interpretation of any proposed narrative objective. The staff report will include consideration of all of the elements listed in Porter Cologne Sections 13241 and 13242. As required by Porter-Cologne, a program of implementation will also be included as part of the Amendment.

**COMMENT 4-4:** Overall, CVCWA commends the Regional Water Board for considering the adoption of numeric water quality objectives for pesticides instead of continuing to rely solely on the narrative objectives currently contained in the Basin Plan. The Regional Water Board should continue to develop specific numeric objectives in accordance with the sound policy provisions contained in the California Water Code prior to the imposition of permit requirements.

**RESPONSE TO COMMENT 4-4:** The Regional Water Board appreciates the Commenter's support of the proposed approach.

### **3.5 Comment Letter 5 – Nicholas N. Poletika, Ph.D., Research Scientist, Dow AgroSciences LLC**

**COMMENT 5-1:** It is understandable that the Regional Board is looking for a method that can handle limited data sets. However, the Regional Water Board should also consider methods that can take advantage of robust data sets such as the one available for chlorpyrifos.

**RESPONSE TO COMMENT 5-1:** The Staff Report will include a comparison of methods that can be used to derive criteria protective of aquatic life. This comparison will include the method currently being developed by the University of California Davis under contract to the Regional Water Board. The scope of work for the contract (Regional Water Board, 2006) includes the objective that the method be applicable to aquatic life effects data sets of varying quantity. Specifically, Section B, Task 2, states that the method include a process that allows the derivation of criteria for pesticides that have varying toxicity datasets (i.e., from limited data sets to robust data sets).

**COMMENT 5-2:** The Regional Water Board should use a methodology that considers the probability of both exposure and effect, ecological relevance, and multiple lines of evidence.

**RESPONSE TO COMMENT 5-2:** The Staff Report will include a comparison of methods that can be used to derive criteria protective of aquatic life. This comparison will include the method currently being developed by the University of California Davis under contract to the Regional Water Board. The scope of work for the contract (Regional Water Board, 2006) includes many of the elements recommended by the Commenter.

**COMMENT 5-3:** The Regional Water Board should consider the following key points related to the protection of water quality:

1. Reasonable protection of beneficial uses requires the ability to detect an actual impairment, should it occur.
2. Therefore, all scientific issues involving derivation of water quality criteria and objectives should revolve around methods to define impairment of freshwater habitat uses that support warm or cold water ecosystems at the ecosystem level of interpretation.
3. As stated in the authoritative National Research Council NRC report on the scientific basis of the TMDL approach to water pollution reduction, multiple lines of evidence are necessary to detect impairment of beneficial uses and evaluate the health of aquatic ecosystems.
4. According to USEPA guidelines, protection of the most sensitive aquatic organisms at all times and in all places is not necessarily required to achieve reasonable protection of beneficial uses at the ecosystem level. Some slight perturbation of aquatic systems is acceptable.

**RESPONSE TO COMMENT 5-3:** Staff will review and consider the USEPA guidelines and NRC report when the staff report is developed. The Commenter's suggestions of an ecosystem level interpretation of water quality impacts would be in conflict with existing beneficial use definitions and narrative water quality objectives. Fundamental changes in the Regional Water Board's approach to beneficial use definition and protection would impact the entire Basin Plan, not only the portions addressing pesticides.

The current narrative toxicity objective states that waters shall be free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. Such detrimental responses may occur at concentration levels much lower than those that would cause an obvious ecosystem impact. The freshwater habitat use definitions indicate that we should preserve and enhance the various components of the freshwater habitat ecosystem (aquatic habitat, vegetation, fish, or wildlife, including invertebrates).

In addition to consideration of conflicts with existing policies, an approach focused solely on observation of ecosystem level impacts would likely not be

protective of water quality. Establishing reference conditions for waterways that are already subject to numerous stresses makes it difficult to quantify what constitutes a “good” aquatic ecosystem in Central Valley waterways. Without reference conditions, ecosystem level impacts are difficult to observe or quantify. In contrast, the approach currently outlined in the Basin Plan, which considers impacts to different components or species in the aquatic ecosystem, is easier to evaluate and is clearly indicative of a water quality problem – i.e., there is a contaminant that is present and impacting organisms dependent on that water body.

Based on the conflicts with existing Basin Plan provisions and the lack of water quality protection afforded by such an approach, an ecosystem level of interpretation of water quality impacts will not be considered in the scope of this Amendment.

**COMMENT 5-4:** The Regional Water Board should consider as an additional line of evidence the biological status of water bodies, addressed through biological monitoring and physical habitat assessment. The Regional Water Board should continue developing biological monitoring data to assist in determining whether water quality impairments exist and to help identify stressors responsible for actual impairments.

**RESPONSE TO COMMENT 5-4:** When evaluating compliance with water quality objectives, the Regional Water Board will consider all relevant lines of evidence. For this Amendment, Regional Water Board staff will consider the appropriateness and feasibility of including biological monitoring and biocriteria as a component of the water quality objectives and monitoring and surveillance requirements.

**COMMENT 5-5:** The commenter provided a set of alternative numeric criteria that can be derived for chlorpyrifos using available data, following approaches allowed by current EPA guidance and methods found in recent peer-reviewed literature.

**RESPONSE TO COMMENT 5-5:** Regional Water Board staff appreciates receiving the information. The information will be reviewed and considered as the Staff Report is developed.

**COMMENT 5-6:** Site-specific approaches are very relevant to the Sacramento and San Joaquin River systems. Many invertebrates inhabiting lentic water bodies such as mosquitoes and cladocerans are extremely sensitive to chlorpyrifos and drive down the target generated by either PERA [Probabilistic Ecological Risk Assessment] or the USEPA method. These invertebrates found in lentic habitat are minor components of the ecosystems of interest in both the mainstem and tributaries of the lotic river systems requiring protection. They do not appear to be present in these lotic habitats in large numbers, nor do they constitute important dietary components of fish inhabiting this system.

**RESPONSE TO COMMENT 5-6:** The proposed Basin Plan Amendment is intended to include surface waters within the Sacramento River and San Joaquin River basins below major reservoirs. This includes not just the rivers themselves but also other surface water bodies within those watersheds. Many of these waterways include segments that are free flowing and some areas that are still waters. In addition, flow regimes can vary significantly within a single waterbody, which can change the characteristics of the waterway.

In general, derivation of criteria will always be based on toxicity test results of species that serve as surrogates of those species that are or would be present in a waterway absent stressors. Unless there is clear evidence that the toxicity test results for freshwater species are not representative, the objectives will be derived from available, valid toxicity test results. Where site-specific environmental characteristics of the waterbody could affect appropriate water quality criteria, they will be considered consistent with the requirements of Porter Cologne Section 13241.

**COMMENT 5-7:** The Regional Water Board should consider a multiple lines of evidence approach, because it embodies evidence from different sources and methods which converge to very similar numbers. For chlorpyrifos, the multiple lines of evidence consist of the USEPA FAV method as updated for the Great Lakes Initiative, PERA, and microcosm/mesocosm studies.

**RESPONSE TO COMMENT 5-7:** Establishment of water quality criteria using a multiple line of evidence approach will be considered when staff is framing the alternatives analysis.

**COMMENT 5-8:** The establishment of narrative sediment quality objectives is appropriate as a method to screen for potential impairment of

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sediment quality, but any possible future regulatory action should take into account the program of the State Board to develop sediment quality objectives. Methodology should be consistent among State programs charged with protecting the same resource.

**RESPONSE TO COMMENT 5-8:** Please see **Response to Comment 3-10** for a complete discussion of coordination with the State Board's Sediment Quality Objective effort.

### **3.6 Comment Letter 6 – Kerry Schmitz, Senior Civil Engineer, County of Sacramento Municipal Services Agency**

**COMMENT 6-1:** The Regional Water Board should include in its strategy for controlling pesticides in urban runoff efforts to improve evaluation and mitigation of potential water quality impacts as part of the pesticide regulatory process, which includes risk assessment, pesticide registration, re-registration, and re-evaluation at the Federal and State levels. For local stormwater agencies, compliance with pesticide TMDLs may be technically infeasible or prohibitively expensive, unless legal uses are adequately evaluated for potential water quality impacts, and appropriate restrictions are imposed during the registration process.

**RESPONSE TO COMMENT 6-1:** See **Response to Comment 3-15**.

**COMMENT 6-2:** The Regional Water Board should call out specific implementation actions for both USEPA and the California Department of Pesticide Regulation (DPR) to better evaluate and address water quality impacts of pesticides. The Regional Water Board should specifically call upon USEPA and DPR to thoroughly and routinely address potential water quality impacts of pesticides, consistent with the goals and methodology of the Federal Clean Water Act, as part of the pesticide regulatory process.

**RESPONSE TO COMMENT 6-2:** Regional Water Board staff will discuss the comment with the Department of Pesticide Regulation. When the policies associated with this Amendment are developed, we will consider the policy suggested by the Commenter.

**COMMENT 6-3:** The costs of studies needed to assess and mitigate potential water quality impacts, including the development of water quality

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criteria to protect aquatic life in both sediments and the water column, should be principally borne by prospective registrants during the pesticide registration process. Although this approach is authorized by current pesticide regulations at the State and Federal levels, it is not current practice, and the Pesticides BPA [Basin Plan Amendment] should call for its implementation by DPR and U.S. EPA.

**RESPONSE TO COMMENT 6-3:** Please see **Response to Comment 6-2**.

**COMMENT 6-4:** A study entitled “Improving Urban Pesticide Regulatory Activities to Protect Water Quality” was conducted in 2005 as part of the Bay Area’s Urban Pesticide Pollution Prevention Project. This study may be very helpful in developing specific recommendations to be included in the Pesticides BPA.

**RESPONSE TO COMMENT 6-4:** Regional Water Board staff appreciates receiving the information. The information will be reviewed and considered as the staff report is developed.

**COMMENT 6-5:** The Relative Risk Evaluation should be refined to address the changes in Pesticide use patterns that have occurred since 2001, when USEPA banned most allowable urban uses of diazinon.

**RESPONSE TO COMMENT 6-5:** The report is being revised and will rely on pesticide use data from 1998 to 2004, instead of 1992 to 2001.

**COMMENT 6-6:** The Relative Risk Evaluation should be refined to address unreported pesticide uses that are not included in the PURs Information based on DPR’s pesticide sales database should be used to estimate unreported uses overall pesticide use.

**RESPONSE TO COMMENT 6-6:** Most unreported pesticide uses are for applications in urban areas. The draft report focuses on agricultural uses. We plan to evaluate non-agricultural pesticide uses in a separate report. We will work with DPR to evaluate the feasibility of using sales information they collect to estimate unreported uses.

**COMMENT 6-7:** The Relative Risk Evaluation should be refined to evaluate Agricultural uses and urban uses together. An analysis of

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relative risk within these two broad areas would be more meaningful, and would be a better tool for identifying priorities.

**RESPONSE TO COMMENT 6-7:** When preparing the Staff report, the analysis of both agricultural and non-agricultural uses will be considered. The selection of pesticides to focus on for this Amendment will be based on an assessment of the pesticides posing the greatest water quality risk, regardless of source.

**COMMENT 6-8:** Data from available studies should be considered in the generation of the Relative Risk Assessment target list. This should include assessment of monitoring data produced in the region, including that planned for the subject Pesticides BPA. For instance, recent studies have identified significant threats to sediment quality in agricultural and urban streams

**RESPONSE TO COMMENT 6-8:** The Relative Risk Evaluation report includes a review of water column concentration data to identify pesticides posing a potentially high risk. A more detailed analysis of monitoring data will be conducted to determine which pesticides will be the focus of this Amendment. The Relative Risk Evaluation report will be revised to include available information on sediment quality impacts.

**COMMENT 6-9:** The Regional Water Board should utilize the findings of the study “Insecticide Market Trends and Potential Water Quality Implications”, which was developed in 2004 for the San Francisco Estuary Project.

**RESPONSE TO COMMENT 6-9:** Regional Water Board staff appreciates receiving the information. The information will be reviewed and considered as the staff report is developed.

**COMMENT 6-10:** Responsibility for assessment of potential water quality impacts and conduct of studies necessary to develop relevant water quality criteria should be borne principally by the registrants, and reviewed and acted upon by USEPA in the pesticide registration process.

**RESPONSE TO COMMENT 6-10:** The Regional Water Board does not have the authority to require changes in the pesticide registration process. The Regional Water Board may undertake studies to support development of this



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Amendment, or may, in the future, require that dischargers conduct such studies. The Regional Water Board will also continue to work with the Department of Pesticide Regulation to identify opportunities for using DPR's regulatory authorities to generate information necessary to evaluate water quality impacts of pesticides.

**COMMENT 6-11:** The work plan should specifically call for coordination of the Regional Water Board's efforts to develop sediment quality criteria with the process being undertaken by the State Board.

**RESPONSE TO COMMENT 6-11:** See **Response to Comment 3-10** for a complete discussion of coordination with the State Board's Sediment Quality Objective effort.

**COMMENT 6-12:** Regional Water Board staff appear to be aware of recent research on sediment quality and pesticide toxicity in Central Valley creek sediments; this research should be considered and incorporated into the Water Board's Pesticides BPA process.

**RESPONSE TO COMMENT 6-12:** The Staff Report will include a discussion of current sediment quality using available and relevant information.

**COMMENT 6-13:** Water Board staff suggested that a beneficial use will be deemed supported if any aquatic life is observed in a given stream. Mere confirmation of the presence or absence of any aquatic life does not provide useful information for any practical purpose. Since it is unlikely that any completely lifeless streams will be found in the Central Valley, the proposed field work would appear to be an inefficient use of resources. Instead, the Regional Water Board should examine the relative status of aquatic life in selected streams.

**RESPONSE TO COMMENT 6-13:** See **Response to Comment 3-5**. Field work may not be required if sufficient information is available to confirm the applicability of the aquatic life beneficial uses for the waterways being addressed. An examination of the relative status of aquatic life may provide useful assessment information, however, such an examination should not be necessary to establish water quality objectives.

**COMMENT 6-14:** The proposed work on aquatic life beneficial uses would be more appropriate for the Basin Plan triennial review process.

**RESPONSE TO COMMENT 6-14:** This work is consistent with the triennial review work plan, which identifies beneficial use designations as a high priority. The Basin Plan triennial review process does not result in changes to the Basin Plan, but provides an opportunity to identify and prioritize needed Basin Planning work.

### **3.7 Comment Letter 7 – John S. Sanders, Ph.D., Chief, Environmental Monitoring Branch, California Department of Pesticide Regulation.**

**COMMENT 7-1:** The Regional Water Board should consider how DPR may help achieve Board goals related to pesticides and water quality. DPR is the lead agency for regulating the sales and use of pesticides in California and is mandated by State law to protect the environment from adverse effects of pesticide use.

**RESPONSE TO COMMENT 7-1:** The Regional Water Board appreciates DPR's offer of assistance. A number of comments on this Amendment have suggested potential roles for DPR. We look forward to continuing to work with DPR on identifying the most effective manner to address pesticide problems in surface waters. Our intent is to construct an Amendment that allows our respective authorities to be applied in a complimentary manner.

**COMMENT 7-2:** The Regional Water Board should consult with DPR throughout the development of these Basin Plan Amendments, consistent with DPR's management agency agreement (MAA) with the State Water Resources Control Board (State Board). It is plausible that if new numeric water quality objectives for pesticides are ultimately adopted by the Regional Water Board, the implementation plans can recognize DPR's commitment to be the Regional Water Board's regulatory partner. This may obviate the need for the Regional Water Board to actively regulate pesticide discharges and instead rely on DPR's authorities over pesticide sales and use to control pesticide discharges

**RESPONSE TO COMMENT 7-2:** See **Response to Comment 7-1**. The requirements of Porter-Cologne mandate the regulation of discharges of wastes by the Regional Water Board. However, to the extent DPR (or US EPA) adopt

and enforce requirements to mitigate pesticide impacts on surface waters, the Regional Water Board should be able to acknowledge those efforts. When the policies associated with this Amendment are developed, we will consider a policy that addresses the role of DPR and how DPR's regulatory actions can be taken into consideration.

**COMMENT 7-3:** The scope of this project should include an element stating that the Regional Water Board will evaluate existing provisions of its Basin Plan that address pesticides and water quality and, if necessary, amend them to maintain a consistent and up-to-date representation of how the Regional Water Board implements water quality objectives for pesticides.

**RESPONSE TO COMMENT 7-3:** Regional Water Board staff agrees and will conduct such an evaluation.

### **3.8 Comment Letter 8 – William Thomas, Representing Dow AgroSciences**

**COMMENT 8-1:** There have been so many new and emerging programs dealing with water quality that they divert attention, create confusion and overtax resources. This new program, therefore, seems unnecessary or premature until these other programs stabilize. These numerous programs are presently emerging or being amended, and are not coordinated between themselves. Most of these programs already deal with pesticide issues; therefore, there are substantial concerns with creating yet another and altogether new program.

**RESPONSE TO COMMENT 8-1:** See **Response to Comment 1-2**.

**COMMENT 8-2:** There are numerous water quality monitoring programs ongoing, many of which are just coming on line and they too are not yet coordinated. Another program of monitoring the same targets over the same general area without coordination is not appropriate.

**RESPONSE TO COMMENT 8-2:** When designing the monitoring program for this Amendment, staff collaborated with other groups to avoid duplication of efforts. These groups included programs within the Regional Water Board, water quality coalitions, other governmental agencies, and with other organizations collecting water quality data. Future monitoring will also be coordinated with other

groups who are doing pesticide monitoring. Also see **Response to Comment 3-14**.

**COMMENT 8-3:** This overall new program is expressly focused on pesticides as if they are the only biological stressors in the watershed. The program should not start with this built-in bias, but should evaluate all biological stressors.

**RESPONSE TO COMMENT 8-3:** The Regional Water Board has the authority to regulate those biological stressors that are associated with the discharge of waste. Pesticides are found in discharges of waste and some of those pesticides are known stressors to the aquatic community, as suggested by the number of pesticide listings on the Clean Water Act Section 303(d) list. Pesticide use information from the Department of Pesticide Regulation suggests that pesticide use is ubiquitous in agricultural and urban settings. Since pesticides are intentionally introduced into the environment to control undesirable plants or animals, it is important to ensure that the discharge of those pesticides does not impact non-target organisms in surface waters. The history of water quality impacts associated with pesticides – bioaccumulation of organo-chlorines; water column toxicity associated with organophosphorus pesticides; and apparent sediment toxicity associated with pyrethroids – highlights the need to maintain regulation of pesticide discharges as a high priority.

The focus of this effort on pesticides does not suggest that pesticides are the only biological stressor. Changes in the natural hydrology of Central Valley streams, along with other stressors, are also likely to impact the aquatic biology. However, an evaluation of all biological stressors suggests a research program that is beyond the scope of a Basin Planning effort. The Surface Water Ambient Monitoring Program (SWAMP) provides the appropriate institutional setting at the Water Boards for such an effort, although the funding currently available does not allow for the comprehensive effort suggested. This comment will be forwarded to staff in SWAMP at the Regional Water Board and State Water Board.

**COMMENT 8-4:** The proposed program seems to suggest that it may attempt to impose aquatic life beneficial use designations universally. If a new beneficial use is to be designated, it should be a specific Amendment to the Basin Plan, and specific to particular designated water bodies

**RESPONSE TO COMMENT 8-4:** Aquatic life beneficial uses will be described in a technical report for natural waterways that are representative of the sub-area they are within. Because the natural waterways of the Central Valley are so numerous, designating aquatic life beneficial uses to every waterway using specific Amendments to the Basin Plan is not practical. In addition, separate Basin Plan Amendments would not be required if the aquatic life uses in those waterways are similar. Should the available information suggest that aquatic life uses in some waterways do not meet the aquatic life use definitions, those water will not be included as part of this Amendment.

**COMMENT 8-5:** The proposed program outlines how it will determine "high risk pesticides relative to aquatic life. Why the sole focus on aquatic life, as opposed to other beneficial uses (municipal, agricultural, recreational, fish, etc.)?

**RESPONSE TO COMMENT 8-5:** Aquatic life is the focus to determine which pesticides pose a high risk, since aquatic life uses (including fish) are generally most sensitive to pesticides. Drinking water criteria are often available and will be reviewed prior to establishing final water quality objectives. Data or criteria on the effects of pesticides on agricultural or recreational uses of water are generally not available. If a particular pesticide is identified as having a greater potential impact on another use, the water quality objectives will be established to protect that more sensitive use.

**COMMENT 8-6:** The suggested mechanism to characterize a pesticide as high risk is overly focused on "pounds of use". This should not be the principle criteria or the program will focus on benign fungicides (i.e., sulfur) and high rate fumigants which do not offer water quality issues.

**RESPONSE TO COMMENT 8-6:** The primary factor considered in ranking a pesticide as a high risk is toxicity, rather than pounds of use. For example, the amount of sulfur use was the highest in terms of weight. However, the 96-hr LC50 was from 180 to 736 ppm. It could be ranked as very low risk based on low toxicity. Based on the extremely low toxicity, sulfur was removed from the target list.

**COMMENT 8-7:** The new program makes passing reference to biological assessments, however, it does not impose or incorporate a full biological evaluation of the area biota to determine if actual "in field"

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biological impacts are actually caused even if an indicator species is slightly decreased at the sample location. These sort of evaluations are the emerging scientific and regulatory approach, yet they have been slow to be initiated in our region

**RESPONSE TO COMMENT 8-7:** If used, biological assessments, or bioassessment, will be used to describe the presence of aquatic life within the streams rather than to evaluate impacts of stressors on the aquatic life. Full evaluation of the status of life within the streams is outside the scope of this Basin Plan Amendment. See **Response to Comment 6-13**

**COMMENT 8-8:** The risk assessment should not just be academically (university) and bureaucratically (Board staff) developed and then sent to peer review. It should be developed in conjunction with interested parties/experts and then fully vetted through science panels

**RESPONSE TO COMMENT 8-8:** The report is posted on our website, so everyone who is interested in the report is welcome to submit comments. Future reports will also be available for public comment. Regional Water Board staff developed the report with review by internal and Department of Pesticide Regulation experts in pesticides and toxicity – no university staff were involved in preparation or review of the report. The report was also reviewed and discussed by the Toxicity Work Group of the Sacramento River Watershed Program.

**COMMENT 8-9:** The program expressly centers on chlorpyrifos and suggests new water quality objectives may be developed. The Board is presently engaged in developing TMDLs for chlorpyrifos in each, the San Joaquin River and the Delta. In each of these endeavors, water quality objectives are being developed and, in fact, are being incorporated into the Basin Plan. These levels are exceedingly low and protective of even the most sensitive biological species. Therefore, there seems to be no need to immediately revisit these criteria issues. The emerging TMDLs also incorporate an additivity formula to further reduce water quality objectives when both chlorpyrifos and diazinon are present. This further points out that a new evaluation is unwarranted.

**RESPONSE TO COMMENT 8-9:** Recent Basin Plan Amendments address only the mainstems of the Sacramento River, San Joaquin River and certain waterbodies within the Delta. In contrast, the proposed Basin Plan Amendment would be more generally applicable to natural waterways within the overall Sacramento and San Joaquin River Basins (below major reservoirs). Therefore,

the geographic scope is much larger than that included in the previous Basin Planning efforts and includes more waterbodies than just the mainstem rivers.

**COMMENT 8-10:** The Regional Water Board should clarify that the additivity formula is inappropriate to engage when the presence of one of the two pesticides is present only at very small levels. When a single pesticide is present at very low levels, there is no biological impact therefore, there is no biological influence which can trigger application of additivity.

**RESPONSE TO COMMENT 8-10:** The staff report will evaluate the appropriate application of additivity formulas as they relate to the proposed Basin Plan Amendment. Regional Water Board staff would appreciate identification or submittal of the references that support the comment.

**COMMENT 8-11:** The program should follow and be consistent with U.S. EPA objectives so as to incorporate consistency and maintain a level playing field.

**RESPONSE TO COMMENT 8-11:** The Staff Report will include a review of various methodologies used to derive water quality criteria. This will include the U.S. EPA criteria and the method used to derive it. A decision about which criteria, if any, to adopt as water quality objectives will be based on of the requirements the Water Code and the Clean Water Act.

**COMMENT 8-12:** There is concern regarding establishing further narrative standards as is suggested for sediment toxicity. Narrative objectives have proven to be problematic and subject to various interpretations and confusion.

**RESPONSE TO COMMENT 8-12:** The Regional Water Board appreciates the concern of the Commenter. Should the Amendment include narrative sediment objectives, an appropriate framework for interpretation of those objectives will be described.

**COMMENT 8-13:** The development of this program should only be advanced with a complete evaluation of the total impact and the economic impact on the agricultural community and the watershed coalitions.

**RESPONSE TO COMMENT 8-13:** Consistent with the requirements of Porter Cologne Sections 13141 and 13241, the proposed Basin Plan Amendment will be evaluated with respect to economic considerations and costs to agriculture.

**COMMENT 8-14:** This new program must be fully coordinated with the California Department of Pesticide Regulation and the agricultural watershed coalitions.

**RESPONSE TO COMMENT 8-14:** Regional Water Board staff agrees and intends to coordinate our efforts with DPR, the agricultural watershed coalitions, and with other programs (e.g. NPDES).

### **3.9 Comment Letter 9 – Carrie McNeil, DVM, Deltakeeper**

**COMMENT 9-1:** Since there are 300 pesticides in the Central Valley and this TMDL will address only those pesticides with a high risk ranking, the Regional Water Board should consider renaming the TMDL based on those specific pesticides in order not to limit future regulation on other pesticides.

**RESPONSE TO COMMENT 9-1:** Regional Water Board staff will include in the Staff Report explanatory text clarifying the intended scope of the Amendment. Staff will also consider a title for the Amendment that clearly conveys that scope.

**COMMENT 9-2:** The purpose of this CEQA review should be to analyze the potential significant adverse environmental impacts, including cumulative effects, of pesticides entering California waters.

**RESPONSE TO COMMENT 9-2:** The Basin Plan Staff report will include a review of the Amendment to identify any significant or potentially significant effects on the environment and mitigation measures proposed to avoid or reduce any significant effects. This evaluation will include an evaluation of potential cumulative effects. The report will include a checklist or other documentation to show the possible effects that the Regional Water Board examined in reaching this conclusion. The Regional Water Board will limit its review of potential impacts to those reasonably foreseeable impacts that might result from implementation of the Basin Plan Amendment. Since there are several hundred



pesticides and all of those pesticides will not be addressed individually by this Amendment, the suggested CEQA review would not be appropriate.

**COMMENT 9-3:** Noting that federal law requires that fishing and swimming beneficial uses be protected in waters of the United States and that the 9th Circuit has held that irrigation canals are Waters of the United States if they exchange waters with natural creeks and other waters of the U.S., the geographic scope of the Central Valley Pesticide TMDL must include all waterways of the United States, including but not limited to agricultural drainages, irrigation canals and channeled urban waterways

**RESPONSE TO COMMENT 9-3:** Federal regulations (Code of Federal Regulations §131.10 et seq.) indicate that a State must conduct a use attainability analysis if any of the uses identified in §101(a)(2) of the Federal Clean Water Act are to be removed or not designated. If those uses (such as recreational uses or aquatic life uses) are removed or not designated, then there would be no federal requirement to protect such uses. Federal regulations also provide for designation of a sub-category of a use, which may not require the same level of protection of the “full” use.

In the case of pesticides, the most limiting uses (i.e. most sensitive) are likely to be aquatic life uses. In some instances, the aquatic community established in a constructed canal or drain may be significantly different from the aquatic community in a natural stream. These differences may be related to differences in pollutant levels, but are also caused by differences in the physical structure, substrate, flow regime, and habitat.

When establishing water quality objectives, the Regional Water Board must consider the beneficial uses of the water (Porter-Cologne §13241(a)). Since those uses are not identified for most constructed canals and drains in the Basin Plan, a use attainability analysis (UAA), per federal requirements, may need to be conducted for certain types of constructed waterways.

Conducting such an analysis would require additional studies in order to identify what differences, if any, there are between aquatic life uses in constructed waterways and streams. Any differences in aquatic life use would then need to be factored into the derivation of the pesticide objective appropriate for that waterway. The level of effort required to conduct the necessary studies and analysis and then derive appropriate objectives is likely to be substantially

greater than can be accomplished with available resources. Recent UAAs have cost about \$500,000 in contract funds and one person-year of staff time.

In summary, there is no federal requirement that this Amendment include all waterways. The Regional Water Board has the discretion to limit its Basin Planning efforts to a subset of waterways. Regional Water Board staff has considered the feasibility of addressing all waterways as part of this Amendment and has determined that resources are not available for such an effort and that unreasonable delays in establishing pesticide objectives for natural streams would occur.

**COMMENT 9-4:** The geographic scope of the Central Valley Pesticide TMDL must address beneficial uses on a waterway by waterway basis

**RESPONSE TO COMMENT 9-4:** Please see **Response to Comment 8.4**. The focus will be on aquatic life uses, since they are generally most sensitive to pesticides.

**COMMENT 9-5:** The scope of the EIR should address establishing standards reflecting the needs of all beneficial uses, including but not limited to drinking water.

**RESPONSE TO COMMENT 9-5:** See **Response to Comment 8-5**.

**COMMENT 9-6:** The scope of the EIR should address water quality throughout the Central Valley and all other potentially affected waterbodies;

**RESPONSE TO COMMENT 9-6:** The geographic scope of the proposed Basin Plan Amendment has been defined to include natural streams within the San Joaquin River and Sacramento River Basins. This choice of geographic scope was based on the regulatory organization of the Regional Water Board. Areas located south of the San Joaquin Basin are managed through the Tulare Lake Basin Plan (Regional Water Board, 2004) and thus cannot be addressed through this basin planning process. The limitation to streams below major reservoirs is based on Staff experience with historical pesticide use patterns. This experience suggests that the majority of pesticide use occurs near the valley floor. Current pesticide use patterns will be evaluated in the Staff Report.

**COMMENT 9-7:** The scope of the EIR should address water quantity throughout the Central Valley and all other potentially affected waterbodies.

**RESPONSE TO COMMENT 9-7:** To the extent that water quantity is an environmental factor as defined under Porter Cologne Section 13241, it will be considered in the development of the water quality objectives.

**COMMENT 9-8:** The scope of the EIR should address groundwater sources throughout the Central Valley and California.

**RESPONSE TO COMMENT 9-8:** An expansion of the scope to address ground water would require significantly more resources than are available for this project. To the extent that management practices identified in the Staff Report have the potential to affect groundwater, they will be addressed.

**COMMENT 9-9:** The scope of the EIR should address municipal drinking water supplies throughout the Central Valley and California.

**RESPONSE TO COMMENT 9-9:** The Regional Water Board's jurisdiction over municipal drinking water supplies is limited to setting and implementing water quality objectives that are protective of municipal beneficial uses. As noted in the **Response to Comment 8-5**, the Regional Water Board will consider criteria for beneficial uses, including municipal supply. Staff experience has been that in most, if not all cases, the beneficial uses most sensitive to pesticide discharges are aquatic life beneficial uses (e.g. warm and cold freshwater habitat). Thus, protection of aquatic life beneficial uses should be protective of other beneficial uses, including drinking water. This assumption will be evaluated in greater detail in the Staff Report.

**COMMENT 9-10:** The scope of the EIR should address biological resources including, but not limited to:

- federal and state listed endangered species
- federal and state listed threatened species
- other aquatic life
- other terrestrial species

**RESPONSE TO COMMENT 9-10:** The purpose of the Amendment is to protect beneficial uses for pesticides posing a high risk to water quality. This would include protection of federal and state listed and endangered aquatic

species. Explicit protection of terrestrial life is beyond the jurisdiction of the Regional Water Board. However, the Staff report will include an evaluation of reasonably foreseeable environmental impacts that could occur as a result of the proposed Basin Plan Amendment. This would include, as appropriate, an evaluation of potential impacts to terrestrial state and federal endangered species.

**COMMENT 9-11:** The scope of the EIR should address terrestrial ecosystems throughout the Central Valley and California. The scope should also address air quality in the Central Valley and throughout California from pesticide drift, and other such air pollutants resulting from the project and alternatives.

**RESPONSE TO COMMENT 9-11:** The Regional Water Board's jurisdiction does not extend beyond waterbodies and the habitat associated with the immediate vicinity of those waterways. The Staff report will include an evaluation of reasonably foreseeable environmental impacts that could occur as a result of the recommended Basin Plan Amendment, including potential air quality impacts.

**COMMENT 9-12:** The scope of the EIR should address soil and sediment in the Central Valley and California including, but not limited to problems involving soil erosion and sediment toxicity.

**RESPONSE TO COMMENT 9-12:** The proposed Basin Plan Amendment includes the establishment of sediment quality objectives for pesticides that could potentially pose a risk to aquatic life from sediment contamination. This work will include an evaluation of the sources of sediment contamination and a review of management measures that could be used to control discharges of contaminants.

**COMMENT 9-13:** The scope of the EIR should address human health throughout the Central Valley and California in terms of both acute and chronic impacts including, but not limited to:

- children, including residents and school children
- laborers, including farmworkers, farmers, pesticide applicators, etc.
- residents
- anglers
- pregnant women
- newborn infants

**RESPONSE TO COMMENT 9-13:** The Regional Water Board's jurisdiction is limited to discharges of wastes into waters of the State within the Central Valley region. To the extent that drinking water consumption or consumption of aquatic organisms could be effected by pesticide discharges, those potential effects will be considered in establishing water quality objectives. Reviews of general human health effects of pesticides takes place as part of the U.S. EPA and Department of Pesticide Regulation registration process.

**COMMENT 9-14:** The scope of the EIR should address recreational, tourism and beneficial uses.

**RESPONSE TO COMMENT 9-14:** See **Response to Comment 8-5**. Protection of aquatic life uses should be protective of recreational beneficial uses.

**COMMENT 9-15:** The scope of the EIR should address farmland conversion and commercialization.

**RESPONSE TO COMMENT 9-15:** The Staff report will include an economic analysis. To the extent that the proposed Basin Plan Amendment could cause reasonably foreseeable economic impacts due to farmland conversion or commercialization, it will be considered.

**COMMENT 9-16:** The scope of the EIR should address food supply and food quality.

**RESPONSE TO COMMENT 9-16:** The Regional Water Board has no jurisdiction over food supply and food quality. This issue will not be included in the scope of the Amendment.

**COMMENT 9-17:** The scope of the EIR should address energy use associated with pumping and delivery of irrigation water.

**RESPONSE TO COMMENT 9-17:** The Regional Water Board has no jurisdiction over energy use associated with pumping and delivery of irrigation water. This issue will not be included in the scope of the Amendment.

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**COMMENT 9-18:** The scope of the EIR should address workers producing toxic chemicals for use under the proposed Basin Plan Amendment.

**RESPONSE TO COMMENT 9-18:** The Regional Water Board has no regulatory jurisdiction over the production of toxic chemicals. To the extent the Regional Water Board has jurisdiction over the discharge of pesticides into surface water bodies, it will be included in the Staff Report under the discussion of implementation measures.

**COMMENT 9-19:** The scope of the EIR should address potential security threats from storage of large quantities of toxic chemicals.

**RESPONSE TO COMMENT 9-19:** The Regional Water Board has no jurisdiction over security issues related to storage of large quantities of toxic materials. This issue will not be included in the proposed Basin Plan Amendment scope of work.

**COMMENT 9-20:** The scope of the EIR should address all other socioeconomic factors, including the cost to treat contaminated water.

**RESPONSE TO COMMENT 9-20:** The Staff report will include an evaluation of management options and economic analysis. If the Regional Water Board proposes to impose treatment requirements on waste dischargers, reasonably foreseeable economic impacts due to a requirement to treat contaminated water will be considered.

**COMMENT 9-21:** The Pesticide Relative Risk Evaluation proposed presents a schematic for ranking pesticides by several variables. However, this ranking and prioritizing of pesticides was completed without full data on all pesticides addressed. Pesticide Risk Assessment must include but not be limited to:

- The additive and synergistic effects of pesticides
- Cumulative impacts
- Those pesticides listed in the 303d list for these waterbodies
- Evaluation of water and sediment for pesticides with high KOC, like pyrethroids
- Include in the evaluation any new pesticides being used within the timeframe of the CEQA process

**RESPONSE TO COMMENT 9-21:** The report does not consider the risk due to additive and synergistic effects since such information is not generally available for all pesticides. However, the Staff report and proposed Basin Plan Amendment will consider additive and synergistic effects of the specific pesticides addressed by the Amendment. 303(d) listed pesticides are not emphasized in the report, since they have already been identified as “high” risk pesticides.

Sediment toxicity data is not generally available for all pesticides. However, where sediment toxicity is known or suspected, such as with pyrethroids, those pesticides will be evaluated in the Staff report. However, the Pesticide Risk Evaluation report does identify potential sediment risks based on the pesticide’s Koc value. Since the risk evaluation results are based on the PUR database, new pesticides use information may not be available and cannot be evaluated.

**COMMENT 9-22:** In the process of evaluating the impacts of the proposed regulation, the Regional Water Board should identify the specific practices that pesticide dischargers would or could adopt for the purposes of complying with the TMDL and Basin Plan Amendment and evaluating the efficacy of these practices for improving water quality. The Regional Water Board should also evaluate the suitability of such practices for application on various crops throughout the Central Valley. Best management practices that might be implemented by Central Valley growers, and should be evaluated, include:

- integrated pest management;
- integrated nutrient management;
- vegetated filter strips, buffer strips and hedgerows;
- on farm drainage management and reuse;
- water conservation and irrigation efficiency;
- cover cropping;
- crop rotation;
- conservation tillage; and
- other erosion control practices.

**RESPONSE TO COMMENT 9-22:** The Staff Report will include an evaluation of available management practices. The practices listed by the Commenter will be considered in that evaluation. The Regional Water Board does not specify the manner of compliance. While the management practices will be evaluated, no specific management practices will be required.

**COMMENT 9-23:** We note that certain best management practices may also pose adverse environmental impacts which must be evaluated, such as increased energy consumption, air emissions, and pollutant concentration in effluent flows or settling ponds.

**RESPONSE TO COMMENT 9-23:** The Staff Report will include an environmental impact analysis that will evaluate the potential impacts of the proposed Basin Plan Amendment consistent with the requirements of Porter Cologne and CEQA.

**COMMENT 9-24:** The following issues must be analyzed regarding the proposed Basin Plan Amendment and any alternatives in light of the State's recent budgetary setbacks:

- the impacts of the proposed Basin Plan Amendment and alternatives on other Regional Water Board programs, including an analysis of staff and funding constraints;
- the impacts of the implementation of a fee generating project alternative (such as permits) versus a project that would fail to generate fees; and
- an analysis of how a project that fails to generate fees will be successfully implemented.

**RESPONSE TO COMMENT 9-24:** When developing the policies for this Amendment, the Regional Water Board will consider the potential obligations on staff time and contract resources. For both waivers of WDRs and WDRs, the State Water Resources Control Board establishes fees. To the extent the proposed Amendment or an alternative would preclude the collection of fees, the Regional Water Board will assess the potential impact of such an alternative on implementation.



### **3.10 Comment Letter 10 – Renee Pinel, President, Western Plan Health Association**

**COMMENT 10-1:** The Regional Water Board's proposed approach inappropriately focuses on the concentration of pesticides being the only stressor potentially impacting aquatic life. The Regional Water Board's approach should consider the biological status of the various water bodies throughout the Central Valley and should account for the interrelationships between all stressors that may impact aquatic life.

**RESPONSE TO COMMENT 10-1:** See **Response to Comment 8-3**.

**COMMENT 10-2:** The USEPA Office of Water recommends the use of biological assessments and biocriteria in state water quality standards programs. The Regional Water Board should apply the USEPA's recommendations regarding the use of biological assessments and biocriteria and apply USEPA's Stressor Identification Process to Central Valley waterways.

**RESPONSE TO COMMENT 10-2:** Regional Water Board staff will review the potential use of biocriteria for this Basin Plan Amendment. It should also be noted that the U.S. EPA suggests that states adopt biocriteria in addition to numeric and toxicity standards. Biocriteria are not meant to replace those standards.

Bioassessment data, where available, is being reviewed to confirm the presence of aquatic life uses in the streams that will be addressed by this Amendment.

**COMMENT 10-3:** The Regional Water Board should review the Ecologically-Based water quality goals that have been established for aquatic life uses in Ohio and Maine. These two states are at the forefront in establishing beneficial use classification systems that recognize the inherent variability of waterways throughout a region. More specifically, both of these programs have established aquatic life beneficial uses that reconcile the difference between ideal conditions and reality, and take into account that pristine conditions for many waterways were eliminated over a hundred years ago through the development of agricultural and urban uses.

**RESPONSE TO COMMENT 10-3:** See **Response to Comment 10-2**.

Regional Water Board staff will review the information provided by the commenter when the potential use of biocriteria is considered.

**COMMENT 10-4:** The Regional Water Board should establish a formal technical review committee for this process. The technical review committee should be composed of qualified experts representing all stakeholder interests and areas of expertise. The Regional Water Board's currently proposed process that is limited to restricted internal and contracted project work followed by limited scientific peer review and public comment is insufficient to ensure that the best scientific methods are used in the review and adoption of water quality standards for the Sacramento and San Joaquin Rivers.

**RESPONSE TO COMMENT 10-4:** The process for review of work products for this Amendment is extensive and goes far beyond the minimum legal requirements. A five-person scientific review panel, which includes State agency staff and academic experts, will review the water quality criteria research being conducted by the University of California, Davis (UC Davis). Peer review is being conducted on the products from three different phases of the UC Davis effort. Regional Water Board staff will continue to post the peer reviewed work products on our web site and inform interested stakeholders of the availability of those work products. Should stakeholders wish to comment on those work products, including the identification of better scientific methods, they can submit their comments to Regional Water Board staff.

The work products associated with evaluating pesticide risk and identifying aquatic life uses will undergo review by Regional Water Board and agency experts prior to release to the public. The public will then have an opportunity to comment on those Regional Water Board work products prior to the use of those work products in formulation of proposed Basin Plan policies. Staff will hold periodic public workshops where additional project details and work products will be discussed, and comments received from those meetings will be considered. Stakeholders may bring technical experts to those stakeholder meetings to discuss the work products.

Once the Basin Plan Amendment staff report is drafted, it will undergo formal scientific peer review as required by State law. Stakeholders will have additional opportunities to review and comment on the application of various work products to the formulation of the proposed Amendment and evaluation of alternatives.

In summary, stakeholders will have multiple opportunities to review and comment on work products generated as part of this Basin Plan Amendment. Technical experts representing stakeholder interests can attend stakeholder meetings to provide input on any scientific issues.

**COMMENT 10-5:** The Regional Water Board should defer its development of a narrative sediment objective until after the State Water Resources Control Board has completed its process for the development of sediment water quality objectives. Considering the significant investment in time and resources that the State Board has invested to develop a scientific, data-driven process, the Regional Water Board would be well-served to rely on its findings. Otherwise, the Regional Water Board will be perceived as establishing a narrative sediment objective that has not undergone the same thorough process, discussion and review as the State Water Board's, and that the Regional Water Board's objective is therefore scientifically invalid and inappropriate.

**RESPONSE TO COMMENT 10-5:** See **Response to Comment 3-10**.

**COMMENT 10-6:** The Regional Water Board must comply with the intent and the specific requirements of the California Water Code when adopting water quality objectives. The specific requirements for adopting water quality objectives (Ca. Water Code §§13241-13242) must be applied consistently with the California Legislature's intent, which is to balance the needs of maintaining high quality water against all of the demands being placed on the water (Ca. Water Code, § 13000). Most importantly, the Regional Water Board must balance the economic considerations against the environmental impacts associated with achieving the objective.

**RESPONSE TO COMMENT 10-6:** See **Response to Comment 4-2**.

**COMMENT 10-7:** The Regional Water Board must also apply California Water Code sections 13241 and 13242 to the adoption of narrative sediment water quality objectives. California Water Code sections 13241 and 13242 apply to the adoption of all water quality objectives, regardless of the nature of the objective. Therefore, the Regional Water Board must consider all of the factors outlined in Water Code section 13241 when adopting narrative objectives, and must prepare programs of implementation as required by Water Code section 13242.

**RESPONSE TO COMMENT 10-7:** When establishing sediment quality objectives, the Regional Water Board intends to comply with all applicable laws, including sections 13241 and 13242 of the California Water Code.

**COMMENT 10-8:** The Regional Water Board must carefully articulate how it intends to interpret the narrative objective and consider the factors of Water Code section 13241 in relationship to interpreting the narrative objective with available water quality criteria. The Regional Water Board should consider economics, water quality conditions that can be reasonably achieved, and other factors contained in Water Code section 13241 on the water quality criteria used to interpret the narrative.

**RESPONSE TO COMMENT 10-8:** See **Response to Comment 4-3**.

**COMMENT 10-9:** The Regional Water Board should use a multiple-lines-of-evidence approach for the development of scientifically sound water quality objectives for both sediment and water.

**RESPONSE TO COMMENT 10-9:** See **Response to Comment 5-7**.

**COMMENT 10-10:** The Regional Water Board should not expend significant time and resources on a broad BPA for pesticides and that does not consider the biological status of the waterbodies in question and does not properly account for all stressors that may impact aquatic life.

**RESPONSE TO COMMENT 10-10:** See **Response to Comment 8-3**.

### **3.11 Comment Letter 11 – John Meek, JMeek Agribusiness Management**

**COMMENT 11-1:** Can a meeting be done using "are" instead of "could"? If we are to discuss could, it should be done with scientific information not emotion. [The comment was made in reference to a description of the Amendment, which stated that pesticides that are impacting or could impact water quality will be addressed].

**RESPONSE TO COMMENT 11-1:** The Regional Water Board intends to use the best available scientific information when developing this Basin Plan Amendment. We will focus on addressing pesticides that are impacting water

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quality, although we do not want to ignore pesticides that could potentially impact water quality. Pesticide use patterns can change significantly, which can result in a “potential” threat rapidly shifting to causing actual impacts (for example, the increase in use of pyrethroids). The establishment of water quality objectives prior to an impact can serve to clarify the limits of pesticide discharges and prevent water quality problems from occurring.

**COMMENT 11-2:** Is this a duplicative effort? I thought the Ag Waiver monitoring would be the vehicle to determine which materials are causing a problem.

**RESPONSE TO COMMENT 11-2:** See **Response to Comment 1-2**.

## 4.0 References

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- Regional Water Board. 2004. *Water Quality Control Plan for the Tulare Lake Basin - Second Edition*. Central Valley Regional Water Quality Control Board. Sacramento, CA. 2004.
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- Lu, Z., G. Davis, and J. Karkoski. 2006. *Relative Risk Evaluation for Pesticides Used in the Sacramento River Watershed*. Central Valley Regional Water Quality Control Board. Sacramento, CA. 2006.
- SWRCB. 2006. *Program Overview Handouts*, in State Water Boards SQO Development Agency Coordination Committee Meeting, 17 April 2006. State Water Resources Control Board (SWRCB). Sacramento, CA. 17 April 2006.
- Weston, D. P., J. C. You, and M. J. Lydy. 2004. Distribution and Toxicity of Sediment-Associated Pesticides in Agriculture Dominated Water Bodies of California's Central Valley. *Environmental Science and Technology*. 38(10): 2752-2759.

## **Appendix A – CEQA Scoping Material Presentation Materials**

To review the California Environmental Quality Act (CEQA) scoping material, please go to: <http://www.waterboards.ca.gov/centralvalley/programs/tmdl/pest-basinplan-amend/index.html#CEQA>.

## **Appendix B – Copies of Public Comment Letters**

To review the comment letters from the public on the scope of the proposed Basin Plan Amendment, please go to:

<http://www.waterboards.ca.gov/centralvalley/programs/tmdl/pest-basinplan-amend/index.html#CEQA>.